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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,047	11/20/2003	Jing Li	P25,711-A USA	1275
23307	7590	05/31/2005	EXAMINER	
SYNNESTVEDT & LECHNER, LLP			ZIMMER, MARC S	
2600 ARAMARK TOWER			ART UNIT	
1101 MARKET STREET			PAPER NUMBER	
PHILADELPHIA, PA 191072950			1712	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/718,047

Applicant(s)

LI ET AL.

Examiner

Marc S. Zimmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-14 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

As a means of setting up the claims for restriction, the following observations about the claims are made:

Claim 1 is directed to an inorganic network polymer having the following structural attributes (i) two-dimensional sheets comprising metal centers bridged to other metal centers by ligands featuring a plurality of bidentate coordination sites and (ii) linking moieties joining the metal centers of different sheets comprising ligands bearing two monodentate coordinative groups per molecule.

Claim 2, which depends from claim 1, provides a more precise description of suitable metals and ligands in addition to a shorthand representation of the chemical makeup of the aforementioned network polymer.

Claim 3 recites a specific embodiment of a polymer adhering to the formula in claim 2.

Claim 4 recites a method of preparing the polymer of claim 3.

Claim 5 recites a method of making some, but not all, of the compounds embraced by claim 2.

Claim 6 is nearly a duplicate of claim 4 except that it also provides for the preparation of the zinc-containing homologues.

Claims 7-10 essentially recite a method of using the compounds contemplated by claim 2. It is notable that, upon carrying out the step recited in claim 9, a product equivalent to that obtained in the process of claim 4 is said to have been obtained as this is an illustration there is more than one synthetic approach for preparing the polymers disclosed by Applicant.

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Claim 11 recites yet another process of making the compounds of claim 1 differing from the aforementioned methods at least in that a different metal complex is employed as a starting material.

Claim 12 recites embodiments of the polymers of claim 1 that are distinct from those outlined in claim 2.

Claim 13 recites a specific embodiment of a polymer adhering to the formula in claim 12.

Claim 14 recites a method of preparing the polymer of claim 13.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-3 and 12-13, drawn to a polymer coordination compound, classified in class 528, subclass 395.
- II. Claims 4-6, drawn to a method of making a polymer coordination compound, classified in class 502, subclass 509.
- III. Claims 7-10, drawn to a method of using a polymer coordination compound, classified in class 502, subclass 150.
- IV. Claim 11, drawn to a method making a polymer coordination compound, classified in class 502, subclass 509.
- V. Claim 14, drawn to a method of using a polymer coordination compound, classified in class 502, subclass 509.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II, I and IV, and I and V are related as process of making and product made. The inventions are distinct if either or both of the following can be

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shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). As was emphasized earlier, the method of claim 9 purports to make the same compound as does the method <sup>of</sup> claim 4 thus clearly demonstrating that there are at least two, if not myriad, ways of making the claimed polymer coordination compounds.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case, the products of group I could be used for selectively removing pollutants/impurities from a system, aqueous or otherwise.

Inventions II, IV, and V, while they are all methods of making polymer coordination compounds, are not methods of making *the same* polymer coordination compounds and, hence, are unrelated.

Inventions II and III, III and IV, and III and V are related as process of making and process of using the product. The use as claimed cannot be practiced with a materially different product. Since the product is not allowable, restriction is proper between said method of making and method of using. The product claim will be examined along with the elected invention (MPEP § 806.05(i)).

Because these inventions are distinct for the reasons given above and the search required for each of the groups requires a different strategy, restriction for examination purposes as indicated is proper.

It is acknowledged that groups II, IV, and V are all classified in the same subclass but this hardly constitutes a reason to keep these inventions grouped together for the reasons already made of record. Moreover, the Examiner has an expectation that the academic literature may prove much more useful in this instance in attempting to find precedent for Applicant's invention in view of the subject matter covered by the present disclosure. Because the non-patent literature is not covered by the classification system employed by the patent Office, it is strongly believed that the similar classification of these inventions will not greatly facilitate the Examiner's efforts to find these inventions in the prior art.

Within the aforementioned groups are recited patentably distinct species of the claimed invention. For instance, claim 3 recites an embodiment of the compounds embraced by claim 2 wherein the repeat unit has different numbers of the metal atoms and polyfunctional bidentate ligands than does the embodiment outlined in claims 12 and 13. Also, the repeating unit of the polymer coordination compounds disclosed in claims 2 and 3 features bound water whereas the embodiments encompassed by claims 12 and 13 do not.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. That is, Applicant should elect for examination a compound

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characterized as having a repeating unit with a designated number of metal atoms, polyfunctional bidentate ligands, exodentate ligands, bound solvent molecules, and bound water molecules. Currently, claims 1 and 2 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

Should applicant traverse on the ground that the species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

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Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc S. Zimmer whose telephone number is 571-272-1096. The examiner can normally be reached on Monday-Friday 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 24, 2005

  
Marc Zimmer  
AU 1712